

SEQUENCE LISTING

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<120> SCREENING METHOD FOR SUBSTANCES BINDING TO MEROZOITE SURFACE PROTEIN-1/42

<130> 056222-5089

<140> US 10/561,196
<141> 2005-12-16

<150> PCT/GB2004/002604
<151> 2004-06-18

<150> GB 0314114.0
<151> 2003-06-18

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<170> PatentIn Ver. 2.1

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Asn Val Lys Asp Ile Leu Asn Ser Arg Phe Asn Lys Arg Glu Asn Phe
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Ser Asn Tyr Val Val Lys Asp Pro Tyr Lys Phe Leu Asn Lys Glu Lys
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Arg Asp Lys Phe Leu Ser Ser Tyr Asn Tyr Ile Lys Asp Ser Ile Asp
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Thr Asp Ile Asn Phe Ala Asn Asp Val Leu Gly Tyr Tyr Lys Ile Leu
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Ser Glu Lys Tyr Lys Ser Asp Leu Asp Ser Ile Lys Lys Tyr Ile Asn
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Asp Lys Gln Gly Glu Asn Glu Lys Tyr Leu Pro Phe Leu Asn Asn Ile
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Glu Thr Leu Tyr Lys Thr Val Asn Asp Lys Ile Asp Leu Phe Val Ile
165 170 175

His Leu Glu Ala Lys Val Leu Asn Tyr Thr Tyr Glu Lys Ser Asn Val
180 185 190

Glu Val Lys Ile Lys Glu Leu Asn Tyr Leu Lys Thr Ile Gln Asp Lys
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Leu Ala Asp Phe Lys Lys Asn Asn Asn Phe Val Gly Ile Ala Asp Leu
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Ser Thr Asp Tyr Asn His Asn Asn Leu Leu Thr Lys Phe Leu Ser Thr
225 230 235 240

Gly Met Val Phe Glu Asn Leu Ala Lys Thr Val Leu Ser Asn Leu Leu
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Asp Gly Asn Leu Gln Gly Met Leu Asn Ile Ser Gln His Gln Cys Val
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Gly Ser Asn Gly Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser		
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Tyr Pro Leu Phe Asp Gly Ile Phe Cys Ser Ser Ser Asn Phe Leu Gly		
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Leu Asn Asp Ile Leu Asn Ser Arg Leu Lys Lys Gly Glu Ala Ile Ser			
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Val Thr Met Asp Asn Ile Leu Ser Gly Phe Glu Asn Glu Tyr Asp Val			
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Ile Tyr Leu Lys Pro Leu Ala Gly Val Tyr Arg Ser Leu Lys Lys Gln			
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Ile Glu Lys Asn Ile Ile Thr Phe Asn Leu Asn Leu Asp Ile Leu			
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Asn Ser Arg Leu Lys Lys Gly Ile Ser Tyr Tyr Glu Lys Val Leu Ala			
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Lys Thr Asp Glu Gln Lys Lys Glu Ser Lys Phe Leu Pro Phe Leu Thr
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Glu Ala His Val Lys Ile Thr Lys Leu Ser Asp Leu Lys Ala Ile Asp
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Asp Lys Ile Asp Leu Phe Lys Asn Thr Asn Asp Phe Glu Ala Ile Lys
225 230 235 240

Lys Leu Ile Asn Asp Asp Thr Lys Lys Asp Met Leu Gly Lys Leu Leu
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Ser Thr Gly Leu Val Gln Asn Phe Pro Asn Thr Ile Ile Ser Lys Leu
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Ile Glu Gly Lys Phe Gln Asp Met Leu Asn Ile Ser Gln His Gln Cys
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Val Lys Lys Gln Cys Pro Glu Asn Ser Gly Cys Phe Arg His Leu Asp
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Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly Asp
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325 330 335

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Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu Phe
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Leu Asn Asp Ile Leu Asn Ser Arg Leu Lys Lys Arg Lys Tyr Phe Leu
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Asp Val Leu Glu Ser Asp Leu Met Gln Phe Lys His Ile Ser Ser Asn
65 70 75 80

Glu Tyr Ile Ile Glu Asp Ser Phe Lys Leu Leu Asn Ser Glu Gln Lys
85 90 95

Asn Thr Leu Leu Lys Ser Tyr Lys Tyr Ile Lys Glu Ser Val Glu Asn
100 105 110

Asp Ile Lys Phe Ala Gln Glu Gly Ile Ser Tyr Tyr Glu Lys Val Leu
115 120 125

Ala Lys Tyr Lys Asp Asp Leu Glu Ser Ile Lys Lys Val Ile Lys Glu
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Glu Lys Glu Lys Phe Pro Ser Ser Pro Pro Thr Thr Pro Pro Ser Pro
145 150 155 160

Ala Lys Thr Asp Glu Gln Lys Lys Glu Ser Lys Phe Leu Pro Phe Leu
165 170 175

Thr Asn Ile Glu Thr Leu Tyr Asn Asn Leu Val Asn Lys Ile Asp Asp
180 185 190

Tyr Leu Ile Asn Leu Lys Ala Lys Ile Asn Asp Cys Asn Val Glu Lys
195 200 205

Asp Glu Ala His Val Lys Ile Thr Lys Leu Ser Asp Leu Lys Ala Ile
210 215 220

Asp Asp Lys Ile Asp Leu Phe Lys Asn His Asn Asp Phe Glu Ala Ile
225 230 235 240

Lys Lys Leu Ile Asn Asp Asp Thr Lys Lys Asp Met Leu Gly Lys Leu
245 250 255

Leu Ser Thr Gly Leu Val Gln Asn Phe Pro Asn Thr Ile Ile Ser Lys
260 265 270

Leu Ile Glu Gly Lys Phe Gln Asp Met Leu Asn Ile Ser Gln His Gln
275 280 285

Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly Cys Phe Arg His Leu
290 295 300

Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly
305 310 315 320

Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys Asn Glu Asn Asn Gly
325 330 335

Gly Cys Asp Ala Asp Ala Lys Cys Thr Glu Glu Asp Ser Gly Ser Asn
340 345 350

Gly Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu
355 360 365

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Leu Asn Asp Ile Leu Asn Ser Arg Leu Lys Lys Arg Lys Tyr Phe Leu
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Asp Val Leu Glu Ser Asp Leu Met Gln Phe Lys His Ile Ser Ser Asn
65 70 75 80

Glu Tyr Ile Ile Glu Asp Ser Phe Lys Leu Leu Asn Ser Glu Gln Lys
85 90 95

Asn Thr Leu Leu Lys Ser Tyr Lys Tyr Ile Lys Glu Ser Val Glu Asn
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Asp Ile Lys Phe Ala Gln Glu Gly Ile Ser Tyr Tyr Glu Lys Val Leu

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Ala Lys Tyr Lys Asp Asp Leu Glu Ser Ile Lys Lys Val Ile Lys Glu		
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Glu Lys Glu Lys Phe Pro Ser Ser Pro Pro Thr Thr Pro Pro Ser Pro		
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Ala Lys Thr Asp Glu Gln Lys Lys Glu Ser Lys Phe Leu Pro Phe Leu		
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Thr Asn Ile Glu Thr Leu Tyr Asn Asn Leu Val Asn Lys Ile Asp Asp		
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Tyr Leu Ile Asn Leu Lys Ala Lys Ile Asn Asp Cys Asn Val Glu Lys		
195	200	205
Asp Glu Ala His Val Lys Ile Thr Lys Leu Ser Asp Leu Lys Ala Ile		
210	215	220
Asp Asp Lys Ile Asp Leu Phe Lys Asn His Asn Asp Phe Asp Ala Ile		
225	230	235
240		
Lys Lys Leu Ile Asn Asp Asp Thr Lys Lys Asp Met Leu Gly Lys Leu		
245	250	255
Leu Ser Thr Gly Leu Val Gln Asn Phe Pro Asn Thr Ile Ile Ser Lys		
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Leu Ile Glu Gly Lys Phe Gln Asp Met Leu Asn Ile Ser Gln His Gln		
275	280	285
Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly Cys Phe Arg His Leu		
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Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly		
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320		
Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys Asn Glu Asn Asn Gly		
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Gly Cys Asp Ala Asp Ala Lys Cys Thr Glu Glu Asp Ser Gly Ser Asn		
340	345	350
Gly Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu		
355	360	365
Phe Asp Gly Ile Phe Cys Ser Ser Ser Asn Phe Leu Gly Ile Ser Phe		
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35 40 45

Leu Asn Asp Ile Leu Asn Ser Arg Leu Lys Lys Arg Lys Tyr Phe Leu
50 55 60

Asp Val Leu Glu Ser Asp Leu Met Gln Phe Lys His Ile Ser Ser Asn
65 70 75 80

Glu Tyr Ile Ile Glu Asp Ser Phe Lys Leu Leu Asn Ser Glu Gln Lys
85 90 95

Asn Thr Leu Leu Lys Ser Tyr Lys Tyr Ile Lys Glu Ser Val Glu Asn
100 105 110

Asp Ile Lys Phe Ala Gln Glu Gly Ile Ser Tyr Tyr Glu Lys Val Leu
115 120 125

Ala Lys Tyr Lys Asp Asp Leu Glu Ser Ile Lys Lys Val Ile Lys Glu
130 135 140

Glu Lys Glu Lys Phe Pro Ser Ser Pro Pro Thr Thr Pro Pro Ser Pro
145 150 155 160

Ala Lys Thr Asp Glu Gln Lys Glu Ser Lys Phe Leu Pro Phe Leu
165 170 175

Thr Asn Ile Glu Thr Leu Tyr Asn Asn Leu Val Asn Lys Ile Asp Asp
180 185 190

Tyr Leu Ile Asn Leu Lys Ala Lys Ile Asn Asp Cys Asn Val Glu Lys
195 200 205

Asp Glu Ala His Val Lys Ile Thr Lys Leu Ser Asp Leu Lys Ala Ile
210 215 220

Asp Asp Lys Ile Asp Leu Phe Lys Asn Thr Asn Asp Phe Glu Ala Ile
225 230 235 240

Lys Lys Leu Ile Asn Asp Asp Thr Lys Lys Asp Met Leu Gly Lys Leu
245 250 255

Leu Ser Thr Gly Leu Val Gln Asn Phe Pro Asn Thr Ile Ile Ser Lys
260 265 270

Leu Ile Glu Gly Lys Phe Gln Asp Met Leu Asn Ile Ser Gln His Gln
275 280 285

Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly Cys Phe Arg His Leu
290 295 300

Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly
305 310 315 320

Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys Asn Glu Asn Asn Gly
325 330 335

Gly Cys Asp Ala Asp Ala Thr Cys Thr Glu Glu Asp Ser Gly Ser Ser
340 345 350

Arg Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu
355 360 365

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35 40 45

Leu Asn Asp Ile Leu Asn Ser Arg Leu Lys Lys Arg Lys Tyr Phe Leu
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Asp Val Leu Glu Ser Asp Leu Met Gln Phe Lys His Ile Ser Ser Asn
65 70 75 80

Glu Tyr Ile Ile Glu Asp Ser Phe Lys Leu Leu Asn Ser Glu Gln Lys
85 90 95

Asn Thr Leu Leu Lys Ser Tyr Lys Tyr Ile Lys Glu Ser Val Glu Asn
100 105 110

Asp Ile Lys Phe Ala Gln Glu Gly Ile Ser Tyr Tyr Glu Lys Val Leu
115 120 125

Ala Lys Tyr Lys Asp Asp Leu Glu Ser Ile Lys Lys Val Ile Lys Glu
130 135 140

Glu Lys Glu Lys Phe Pro Ser Ser Pro Pro Thr Thr Pro Pro Ser Pro
145 150 155 160

Ala Lys Thr Asp Glu Gln Lys Lys Glu Ser Lys Phe Leu Pro Phe Leu
165 170 175

Thr Asn Ile Glu Thr Leu Tyr Asn Asn Leu Val Asn Lys Ile Asp Asp
180 185 190

Tyr Leu Ile Asn Leu Lys Ala Lys Ile Asn Asp Cys Asn Val Glu Lys
195 200 205

Asp Glu Ala His Val Lys Ile Thr Lys Leu Ser Asp Leu Lys Ala Ile
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Asp Asp Lys Ile Asp Leu Phe Lys Asn Pro Tyr Asp Phe Glu Ala Ile
225 230 235 240

Lys Lys Leu Ile Asn Asp Asp Thr Lys Lys Asp Met Leu Gly Lys Leu
245 250 255

Leu Ser Thr Gly Leu Val Gln Asn Phe Pro Asn Thr Ile Ile Ser Lys
260 265 270

Leu Ile Glu Gly Lys Phe Gln Asp Met Leu Asn Ile Ser Gln His Gln
275 280 285

Cys Val Lys Lys Gln Cys Pro Glu Asn Ser Gly Cys Phe Arg His Leu
290 295 300

Asp Glu Arg Glu Glu Cys Lys Cys Leu Leu Asn Tyr Lys Gln Glu Gly
305 310 315 320

Asp Lys Cys Val Glu Asn Pro Asn Pro Thr Cys Asn Glu Asn Asn Gly
325 330 335

Gly Cys Asp Ala Asp Ala Thr Cys Thr Glu Glu Asp Ser Gly Ser Ser
340 345 350

Arg Lys Lys Ile Thr Cys Glu Cys Thr Lys Pro Asp Ser Tyr Pro Leu
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Ile Thr Asp Met Leu Asp Ser Arg Leu Lys Lys Arg Asn Tyr Phe Leu
50 55 60

Glu Val Leu Asn Ser Asp Leu Asn Pro Phe Lys Tyr Ser Pro Ser Gly
65 70 75 80

Glu Tyr Ile Ile Lys Asp Pro Tyr Lys Leu Leu Asp Leu Glu Lys Lys
85 90 95

Lys Lys Leu Leu Gly Ser Tyr Lys Tyr Ile Gly Ala Ser Ile Asp Lys
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Asp Leu Gly Thr Ala Asn Asp Gly Val Asn Tyr Tyr Asn Lys Met Gly
115 120 125

Glu Leu Tyr Lys Thr His Leu Thr Ala Val Asn Glu Glu Val Lys Lys
130 135 140

Val Glu Ala Asp Ile Lys Ala Glu Asp Asp Lys Ile Lys Lys Ile Gly
145 150 155 160

Ser Asp Ser Thr Lys Thr Glu Lys Thr Gln Ser Met Ala Lys Lys
165 170 175

Ala Glu Leu Glu Lys Tyr Leu Pro Phe Leu Asn Ser Leu Gln Lys Glu
180 185 190

Tyr Glu Ser Leu Val Ser Lys Val Asn Thr Tyr Thr Asp Asn Leu Lys
195 200 205

Lys Val Ile Asn Asn Cys Gln Leu Glu Lys Lys Glu Ala Glu Ile Thr
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Val Lys Lys Leu Gln Asp Tyr Asn Lys Met Asp Glu Lys Leu Glu Glu

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Tyr Lys Lys Ser Glu Lys Lys Asn Glu Val Lys Ser Ser Gly Leu Leu			
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Glu Lys Leu Met Lys Ser Lys Leu Ile Lys Glu Asn Glu Ser Lys Glu			
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Ile Leu Ser Gln Leu Leu Asn Val Gln Thr Gln Leu Leu Thr Met Ser			
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Ser Glu His Thr Cys Ile Asp Thr Asn Val Pro Asp Asn Ala Ala Cys			
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Tyr Arg Tyr Leu Asp Gly Met Glu Glu Trp Arg Cys Leu Leu Thr Phe			
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Lys Glu Glu Gly Gly Lys Cys Val Pro Gly Ser Asn Val Thr Cys Lys			
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Ser Asn Lys Ile Val Cys Lys Cys Thr Lys Glu Gly Ser Glu Pro Leu			
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Phe Glu Gly Val Phe Cys Ser Ser Ser Phe Leu Ser Leu Ser Phe			
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    35            40                45

Ile Thr Asp Met Leu Asp Ser Arg Leu Lys Lys Arg Asn Tyr Phe Leu
    50            55                60

Glu Val Leu Asn Ser Asp Leu Asn Pro Phe Lys Tyr Ser Ser Ser Gly
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Lys Lys Leu Ile Gly Ser Tyr Lys Tyr Ile Gly Ala Ser Ile Asp Met
100 105 110

Asp Leu Ala Thr Ala Asn Asp Gly Val Thr Tyr Tyr Asn Lys Met Gly
115 120 125

Glu Leu Tyr Lys Thr His Leu Asp Gly Val Lys Thr Glu Ile Lys Lys
130 135 140

Val Glu Asp Asp Ile Lys Lys Gln Asp Glu Glu Leu Lys Lys Leu Gly
145 150 155 160

Asn Val Asn Ser Gln Asp Ser Lys Lys Asn Glu Phe Ile Ala Lys Lys
165 170 175

Ala Glu Leu Glu Lys Tyr Leu Pro Phe Leu Asn Ser Ile Gln Lys Glu
180 185 190

Tyr Ser Glu Leu Val Ser Lys Val Asn Thr Tyr Thr Asp Asn Leu Lys
195 200 205

Lys Val Ile Asn Asn Cys Gln Leu Glu Lys Lys Glu Ala Glu Ile Thr
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Val Lys Lys Leu Gln Asp Tyr Asn Lys Met Asp Glu Lys Leu Glu Glu
225 230 235 240

Tyr Lys Lys Ser Glu Lys Lys Asn Glu Val Lys Ser Ser Gly Leu Leu
245 250 255

Glu Lys Leu Met Lys Ser Lys Leu Ile Lys Glu Asn Glu Ser Lys Glu
260 265 270

Ile Leu Ser Gln Leu Leu Asn Val Gln Thr Gln Leu Leu Thr Met Ser
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Ser Glu His Thr Cys Ile Asp Thr Asn Val Pro Asp Asn Ala Ala Cys
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Tyr Arg Tyr Leu Asp Gly Thr Glu Glu Trp Arg Cys Leu Leu Thr Phe
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Lys Glu Glu Gly Gly Lys Cys Val Pro Ala Ser Asn Val Thr Cys Lys
325 330 335

Asp Asn Asn Gly Gly Cys Ala Pro Glu Ala Glu Cys Lys Met Thr Asp
340 345 350

Ser Asn Lys Ile Val Cys Lys Cys Thr Lys Glu Gly Ser Glu Pro Leu
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35 40 45

Ile Thr Asp Met Leu Asp Ser Arg Leu Lys Lys Arg Asn Tyr Phe Leu
50 55 60

Glu Val Leu Asn Ser Asp Leu Asn Pro Phe Lys Tyr Ser Ser Ser Gly
65 70 75 80

Glu Tyr Ile Ile Lys Asp Pro Tyr Lys Leu Leu Asp Leu Glu Lys Lys
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Lys Lys Leu Ile Gly Ser Tyr Lys Tyr Ile Gly Ala Ser Ile Asp Met
100 105 110

Asp Leu Ala Thr Ala Asn Asp Gly Val Thr Tyr Tyr Asn Lys Met Gly
115 120 125

Glu Leu Tyr Lys Thr His Leu Asp Gly Val Lys Thr Glu Ile Lys Lys
130 135 140

Val Glu Asp Asp Ile Lys Lys Gln Asp Glu Glu Leu Lys Lys Leu Gly
145 150 155 160

Asn Val Asn Ser Gln Asp Ser Lys Lys Asn Glu Phe Ile Ala Lys Lys
165 170 175

Ala Glu Leu Glu Lys Tyr Leu Pro Phe Leu Asn Ser Ile Gln Lys Glu
180 185 190

Tyr Ser Glu Leu Val Ser Lys Val Asn Thr Tyr Thr Asp Asn Leu Lys
195 200 205

Lys Val Ile Asn Asn Cys Gln Leu Glu Lys Lys Glu Ala Glu Ile Thr
210 215 220

Val Lys Lys Leu Gln Asp Tyr Asn Lys Met Asp Glu Lys Leu Glu Glu
225 230 235 240

Tyr Lys Lys Ser Glu Lys Lys Asn Glu Val Lys Ser Ser Gly Leu Leu
245 250 255

Glu Lys Leu Met Lys Ser Lys Leu Ile Lys Glu Asn Glu Ser Lys Glu
260 265 270

Ile Leu Ser Gln Leu Leu Asn Val Gln Thr Gln Leu Leu Thr Met Ser
275 280 285

Ser Glu His Thr Cys Ile Asp Thr Asn Val Pro Asp Asn Ala Ala Cys
290 295 300

Tyr Arg Tyr Leu Asp Gly Thr Glu Glu Trp Arg Cys Leu Leu Thr Phe
305 310 315 320

Lys Glu Glu Gly Gly Lys Cys Val Pro Ala Ser Asn Val Thr Cys Lys
325 330 335

Asp Asn Asn Gly Gly Cys Ala Pro Glu Ala Glu Cys Lys Met Thr Asp
340 345 350

Ser Asn Lys Ile Val Cys Lys Cys Thr Lys Glu Gly Ser Glu Pro Leu
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Leu Asp Ser Glu Leu Asn Pro Phe Lys Tyr Ser Ser Ser Gly Glu Tyr
35 40 45

Ile Ile Lys Asp Pro Tyr Lys Leu Leu Asp Leu Glu Gln Lys Lys

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65	70	75
Ile Thr Ala Lys Asp Gly Met Glu Tyr Tyr Lys Lys Met Gly Glu Leu		
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Tyr Lys Gln His Leu Glu Ala Val Asn Ala Gln Ile Lys Glu Ile Glu		
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Ala Ser Val Pro Gly Glu Gln Ser Gln Leu Asn Ala Gln Lys Glu Glu		
115	120	125
Leu Lys Lys Tyr Leu Pro Phe Leu Asn Ser Ile Gln Lys Glu Tyr Glu		
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Ser Leu Val Asn Met Ala His Thr Tyr Lys Glu Asn Leu Lys Lys Phe		
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Ile Asn Asn Cys Gln Met Glu Lys Lys Glu Thr Glu Ile Ile Val Lys		
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Lys Leu Glu Asp Tyr Thr Lys Ile Asp Glu Asn Leu Glu Ile Tyr Lys		
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Lys Ser Lys Lys Glu Ser Asp Val Arg Ser Ser Gly Leu Leu Glu Lys		
195	200	205
Leu Lys Asn Ser Lys Leu Ile Asn Glu Glu Val Ser Lys Lys Val Leu		
210	215	220
Ser Gln Leu Leu Asn Val Gln Thr Gln Met Leu Asn Met Ser Ser Ala		
225	230	235
240		
His Lys Cys Ile Asp Thr Asn Val Pro Glu Asn Ala Ala Cys Tyr Arg		
245	250	255
Tyr Leu Asp Gly Thr Glu Glu Trp Arg Cys Leu Leu Gly Phe Lys Glu		
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Val Gly Gly Lys Cys Val Pro Ala Ser Ile Thr Cys Glu Glu Asn Asn		
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Gly Gly Cys Ala Pro Glu Ala Glu Cys Thr Met Glu Asp Lys Lys Glu		
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35 40 45

Met Thr Asn Gly Leu Asn Asn Lys Ser Gln Lys Arg Asn Asp Phe Leu
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Glu Val Leu Ser His Glu Leu Asp Leu Phe Lys Asp Leu Ser Thr Asn
65 70 75 80

Lys Tyr Val Ile Arg Asn Pro Tyr Gln Leu Leu Asp Asn Asp Lys Lys
85 90 95

Asp Lys Gln Ile Val Asn Leu Lys Tyr Ala Thr Lys Gly Ile Asn Glu
100 105 110

Asp Ile Glu Thr Thr Asp Gly Ile Lys Phe Phe Asn Lys Met Val
115 120 125

Glu Leu Tyr Asn Thr Gln Leu Ala Ala Val Lys Glu Gln Ile Ala Thr
130 135 140

Ile Glu Ala Glu Thr Asn Asp Thr Asn Lys Glu Glu Lys Lys Tyr
145 150 155 160

Ile Pro Ile Leu Glu Asp Leu Lys Gly Leu Tyr Glu Thr Val Ile Gly
165 170 175

Gln Ala Glu Glu Tyr Ser Glu Glu Leu Gln Asn Arg Leu Asp Asn Tyr
180 185 190

Lys Asn Glu Lys Ala Glu Phe Glu Ile Leu Thr Lys Asn Leu Glu Lys
195 200 205

Tyr Ile Gln Ile Asp Glu Lys Leu Asp Glu Phe Val Glu His Ala Glu
210 215 220

Asn Asn Lys His Ile Ala Ser Ile Ala Leu Asn Asn Leu Asn Lys Ser
225 230 235 240

Gly Leu Val Gly Glu Gly Glu Ser Lys Lys Ile Leu Ala Lys Met Leu
245 250 255

Asn Met Asp Gly Met Asp Leu Leu Gly Val Asp Pro Lys His Val Cys
260 265 270

Val Asp Thr Arg Asp Ile Pro Lys Asn Ala Gly Cys Phe Arg Asp Asp
275 280 285

Asn Gly Thr Glu Glu Trp Arg Cys Leu Leu Gly Tyr Lys Lys Gly Glu
290 295 300

Gly Asn Thr Cys Val Glu Asn Asn Asn Pro Thr Cys Asp Ile Asn Asn
305 310 315 320

Gly Gly Cys Asp Pro Thr Ala Ser Cys Gln Asn Ala Glu Ser Thr Glu
325 330 335

Asn Ser Lys Lys Ile Ile Cys Thr Cys Lys Glu Pro Thr Pro Asn Ala
340 345 350

Tyr Tyr Glu Gly Val Phe Cys Ser Ser Ser Ser Phe Met Gly Leu Ser
355 360 365

Ile Leu Leu Ile Ile Thr Leu Ile Val Phe Asn Ile Phe
370 375 380

<210> 14
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<212> PRT
<213> Plasmodium berghei

<400> 14
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Asn Glu Ser Glu Tyr Leu Tyr Ala Arg Ser Leu Gly Ile Thr Tyr Lys
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Ser Leu Lys Lys His Met Ile Arg Glu Phe Ser Thr Ile Lys Glu Asp
35 40 45

Met Thr Thr Gly Leu Asn Asn Lys Leu Gln Lys Arg Asn Asp Phe Leu
50 55 60

Glu Val Leu Asn His Glu Leu Asp Leu Phe Lys Asp Leu Ser Thr Asn
65 70 75 80

Lys Tyr Val Ile Arg Asn Pro Tyr Gln Leu Leu Asp Asn Asp Lys Lys
85 90 95

Asp Lys Gln Ile Val Asn Leu Lys Tyr Ala Ala Lys Gly Val Asn Glu
100 105 110

Asp Ile Glu Thr Thr Ala Asp Gly Ile Lys Phe Phe Asn Lys Met Ile
115 120 125

Glu Leu Tyr Lys Ile Gln Leu Ala Ala Val Lys Glu Gln Ile Asp Ala
130 135 140

Ile Glu Ala Ala Thr Thr Asp Lys Asp Glu Lys Lys Tyr Val Pro
145 150 155 160

Ile Phe Glu Asp Leu Lys Gly Leu Tyr Glu Thr Ile Leu Gly Gln Ser
165 170 175

Glu Glu Tyr Ile Glu Val Leu Gln Asn Arg Leu Asp Ser Tyr Lys Asn
180 185 190

Glu Lys Thr Glu Phe Glu Ile Leu Thr Lys Asn Leu Glu Thr Tyr Ile
195 200 205

Lys Ile Asp Glu Lys Leu Glu Asn Phe Val Glu Asn Ala Glu Asn Asn
210 215 220

Lys His Ile Ala Ser Ile Ala Leu Asn Asn Leu Asn Lys Ser Gly Leu
225 230 235 240

Val Gly Glu Gly Glu Ser Lys Lys Ile Leu Ala Lys Met Leu Asn Met
245 250 255

Asp Ser Met Asp Leu Leu Gly Ile Asp Pro Lys His Val Cys Ile Asn
260 265 270

Thr Arg Asp Ile Pro Ala Asn Ala Gly Cys Phe Arg Tyr Asp Asn Gly
275 280 285

Asn Glu Glu Trp Arg Cys Leu Leu Gly Tyr Lys Lys Asn Asn Asn Thr
290 295 300

Cys Ile Glu Asp Ser Asn Pro Thr Cys Gly Asn Asn Asn Gly Cys
305 310 315 320

Asp Pro Thr Ala Gly Cys Gln Thr Ala Glu Asn Arg Glu Asn Ser Lys
325 330 335

Lys Ile Ile Cys Thr Cys Lys Glu Pro Thr Pro Asn Ala Tyr Tyr Asp
340 345 350

Gly Val Phe Cys Ser Ser Ser Phe Met Gly Leu Ser Ile Leu Leu
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Ile Ile Thr Leu Ile Val Phe Asn Ile Phe
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<211> 380

<212> PRT

<213> Plasmodium chabaudi

<400> 15

Ala Gln Ser Thr Asp Glu Glu Val Lys Asp Ile Leu Asp Ala Phe Lys
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Ser Glu Asn Glu Tyr Ile Tyr Thr Lys Ser Leu Gly Asn Thr Tyr Lys
20 25 30

Ser Phe Lys Lys His Met Leu Lys Glu Phe Ser Met Ile Lys Glu Asp
35 40 45

Ile Met Thr Gly Leu Asn Tyr Lys Leu Glu Lys Arg Asn Asp Phe Leu
50 55 60

Asp Val Leu Ser Tyr Glu Leu Ala Leu Phe Lys Asp Ile Asn Thr Asn
65 70 75 80

Lys Phe Val Val Lys Asn Pro Tyr Gln Leu Leu Asp Asn Asp Lys Lys
85 90 95

Asp Lys Gln Met Ile Asn Leu Lys Tyr Ala Ile Lys Gly Val Thr Glu
100 105 110

Asp Ile Glu Thr Ala Thr Asp Gly Ile Glu Phe Phe Asn Lys Met Ile
115 120 125

Glu Leu Tyr Lys Pro Gln Leu Asn Ala Val Asn Glu Gln Ile Ala Ala
130 135 140

Ile Gly Thr Glu Pro Thr Asp Ala Glu Lys Lys Tyr Ala Pro Ile
145 150 155 160

Phe Glu Asp Leu Lys Gly Leu Tyr Glu Thr Ile Leu Asn Gly Ala Glu
165 170 175

Glu Phe Ser Glu Leu Leu Gln His Lys Leu Glu Asn Tyr Lys Ile Glu
180 185 190

Lys Ala Gly Phe Asp Ile Leu Met Ala Asn Leu Glu Thr Tyr Ile Arg
195 200 205

Ile Asp Glu Lys Leu Glu Asp Phe Val Glu Ser Ala Glu Lys Asn Lys
210 215 220

His Ile Ala Ser Ile Ala Leu Asn Asn Leu Asn Lys Ser Gly Leu Val
225 230 235 240

Thr Glu Gly Glu Ser Lys Lys Ile Leu Ala Lys Met Leu Asn Met Asp
245 250 255

Ala Met Asp Leu Leu Gly Ile Gly Ser Asn His Val Cys Ile Ser Thr

260

265

270

Ser Thr Pro Asp Asn Ala Gly Cys Phe Arg Tyr Asp Asp Gly Thr Glu
275 280 285

Glu Trp Arg Cys Leu Leu Gly Phe Lys Lys Asp Asp Asp Gly Asn Arg
290 295 300

Cys Val Ala Asp Asp Ala Pro Val Cys Asn Asn Asn Asn Gly Gly Cys
305 310 315 320

Asp Lys Asn Ala Asp Cys Arg Glu Val Glu Asn Thr Asp Arg Asp Pro
325 330 335

Ser Lys Lys Ile Val Cys Thr Cys Lys Glu Pro Asn Pro Asn Ala Tyr
340 345 350

Tyr Ala Gly Val Phe Cys Ser Ser Ser Gly Phe Met Gly Leu Ser Ile
355 360 365

Leu Leu Ile Ile Thr Leu Ile Val Phe Asn Leu Phe
370 375 380